

REMARKS

Claims 101-108, 112, 114-119, 122-132, 186-190 have been canceled and replaced by new Claims 193-212. New Claims 193-212 address the informalities and other issues raised by the Examiner, and reflect the suggestions made by the Examiner during the recent in-person interview between the Examiner and Applicants. Twenty (20) claims remain pending in the application: Claims 193-212. Consideration of new Claims 193-212 is respectfully requested.

Initially, Applicants acknowledge with great appreciation the Examiner's participation and hospitality in the in-person interview of July 19, 2001. Applicants further acknowledge and thank the Examiner for his generosity with his time, and for the suggestions made as to combinations in claims to which the Examiner would be receptive. New Claims 193-212 have been added in an attempt to reflect the suggestions made by the Examiner during the in-person interview. Specifically, each of Claims 193 through 202 now recite: (a) inhibiting substance occupying at least about 50 percent of the volume within a projectile; (b) a rigid frangible shell; and (c) the inhibiting substance including a powdered capsasinoid. Each of Claims 203 through 212 now recite (a) an inhibiting substance occupying at least about 50 percent of the volume within a projectile; (b) a frangible shell comprising a rigid plastic material; and (c) the projectile without a cartridge containing an ignitable powder for launching the projectile.

By way of this amendment, Applicants have made a diligent effort to reflect the Examiner's suggestions in the claims and thus place all of the claims in condition for allowance. Should there remain any outstanding issues, however, that require adverse action, it is respectfully requested that the Examiner telephone Thomas F. Lebens directly

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at (858) 587-7644 so that such issues may be resolved as expeditiously as possible.


Turning to the specific objections and rejections:

1. In paragraph 4 of the Office Action, Claims 186-190 stand rejected under 35 U.S.C. § 112, second paragraph, since there is no antecedent basis for "the capsule" in Claim 186. Applicants have canceled Claim 186, thus, it is respectfully submitted that the rejection is moot. Applicants have endeavored to avoid any further rejections or objections under 35 U.S.C. § 112 in new Claims 193 through 212. Applicants respectfully request that any remaining rejections or objections under 35 U.S.C. § 112 be resolved by telephone and, if needed, an appropriate Examiner's amendment.

2. In paragraph 7 of the Office Action, Claims 101, 105 through 107 and 186 stand rejected under 35 U.S.C. § 102(b), as being anticipated by U.S. Patent No. 5,361,700 (Carbone).

Claims 101, 105 through 107 and 186 have been canceled and replaced with new Claims 193 through 212.

At the outset, Applicants note that new Claims 193 through 212 recite structure suggested by the Examiner during the in-person interview. Thus, while Applicants strongly disagree with the Examiner's characterization of the Carbone reference as disclosing what is claimed in Claims 101, 105 through 107 and 186, Applicants business objectives are presently best served by pursuing claims structured as suggested by the Examiner in hopes of obtaining a swift allowance, and issuance of a patent on Applicants invention. Accordingly, while the following sets forth Applicants'



positions with respect to Carbone, many of which are relevant to cancelled Claims 101, 105-107 and 186, new Claims 193 through 212 are believed allowable as they include the combinations of structures suggested by the Examiner during the in-person interview as being combinations of structures to which the Examiner would be receptive.

Carbone discloses a projectile containing "marking dyes, or paints, or irritants, such as pepper or teargas or the like" (Col. 1, lines 9-10). This is the only reference to "pepper" in the Carbone reference.

Carbone does not disclose a powdered substance within a frangible projectile. Furthermore, with respect to new Claim 193, Carbone does not disclose that the powdered inhibiting substance comprises a powdered capsaicinoid; with respect to new Claim 203, Carbone does not disclose that the powdered inhibiting substance comprises a powdered pepper substance.

Carbone only discloses liquid or gas-filled projectiles (see Col. 1, lines 9-10), *not projectiles containing a powder*. This conclusion is bolstered by the Carbone reference, which at Column 1, lines 13-14, describes "paint and other fluid containing ball projectiles". At Column 3, lines 7-9, Carbone describes a ball made of gelatin and "containing 2.5 cc of fluid paint".

Carbone discloses that the projectile contains an irritant, such as pepper. As is well understood and recognized in law enforcement in the context of riot control and the use of less-lethal and non-lethal force (i.e., the context in which Carbone uses the term "pepper"), the term "pepper" refers to an irritant that is in a liquid form, not in a powder form. The attached Declarations of Charles N. Mills (hereafter referred to as the Mills declaration) and Robbin Wagg (hereafter referred to as the Wagg declaration) state that the term

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"pepper", as disclosed in Carbone and understood in the art at the time Carbone was filed and issued, as well as is generally understood today, clearly means a liquid, not a powder.¹ For example, pepper in this context is known as pepper spray, which is a liquid/oil pepper extract contained under pressure with an aerosol.²

Additionally, no where in Carbone is the word "powder" used when referring to the substance contained within a projectiles; Carbone specifically uses the word "powder" in association with the "base powder charge" for launching the projectile (see Col. 1, line 63 and Col. 2, line 29 of Carbone, for example), thus evidencing that when Carbone intends to refer to a powder, Carbone uses the word "powder". Carbone refers only to *liquid* and *gas* when referring to the contents of projectiles.

The term "pepper", interpreted in the context of food products, i.e., salt and pepper table condiments, may resemble a powder-like material, however, such usage is out of the context of the Carbone reference. Furthermore, such pepper is better referred to as a granulated solid, *not a powder*. And additionally, Carbone specifically states that the *pepper* to which he is referring is an irritant, i.e., "a projectile containing...irritants, such as pepper"³. Thus, the term "pepper" as described by Carbone is properly interpreted as an *irritant*, e.g., for law enforcement use and riot control⁴, *not*

¹Mills Declaration, paragraphs 34-35; Wagg Declaration, paragraphs 41-43. (Hereinafter all declarations will be cited to in the format "Declarant Name, paragraph number(s)", e.g., "Mills, 34-35" and Wagg, 41-43")

²Mills, 32; Wagg, 40.

³Carbone, Col. 1, lines 13-14.

⁴Id.

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as a food product. Black pepper, i.e., the table condiment, is not an irritant, in the context of the Carbone reference--in fact black pepper would be ineffective if one were to attempt to use it in a projectile system such as suggested by Carbone. Instead, the term "pepper" should interpreted in the context of the Carbone reference, i.e., in the context of irritants for less-lethal or non-lethal force applications, which is well understood to mean a liquid substance, *not a powder substance*.

Further supporting this position is the fact that Carbone does not disclose any structure or methodology that would enable one of ordinary skill in the art to load a powder into the projectile. Carbone alludes to the fact that paint and other *fluid* containing projectiles are used in paintball games and training applications for police, military, SWAT and other law enforcement agencies, but does not describe uses of, structures for or methods of making powder-filled projectiles whatsoever. In short, Carbone does not enable one of ordinary skill in the art to make a powder-filled projectile.

At column 3, lines 7-9, Carbone describes a "ball 15 made of a gelatin or gelatin encapsulating material containing 2.5 cc of *fluid* paint". Gelatins and gelatin encapsulating materials are generally unacceptable for use with powdered substances, particularly absent any teaching of how to load a powder into a gelatin or gelatin encapsulating material. Carbone is silent as to how a powder could be loaded into a projectile 15, while at the same time describing only projectiles conventionally used with liquid contents. While the manufacture of fluid containing paintballs is at least alluded to, Carbone does not disclose any structure or methodology for loading a powder into a projectile.

Furthermore, Carbone does not disclose a frangible projectile *without a cartridge containing an ignitable powder*

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for launching the projectile, as recited in new Claim 203. Carbone is directed specifically to and focused on a cartridge for launching a projectile--which explains, in part, why Carbone does not describe the projectile, as mentioned above. Carbone is directed to a cartridge including a ball-holder-fan unit (13, 17) that separates from a projectile ball upon launching, and expands into a fan-like shape and harmlessly falls to the ground. Carbone's objective is to teach a ball-holder-fan unit that does not travel far, and thus is less likely to hit a target. The ball and the ball-holder-fan unit are launched by igniting a convention powder charge (7) in a shotgun cartridge. No where does Carbone describe or suggest that the projectile or ball can be *without a cartridge containing an ignitable powder for launching the projectile.*

Additionally, Carbone does not disclose that the *powdered substance, as recited in new Claims 193 and 203, occupies at least about 50% of the volume within the projectile.* Carbone does not discuss the percentage fill of its projectiles at all.

Furthermore, Carbone does not describe or suggest that the projectile includes a shell that is a *rigid frangible shell* or a *rigid plastic material*. Carbone discloses only gelatin projectiles. And, as mentioned above, such gelatin projectiles are unsuitable for use with powder, such as are claimed by Applicants, particularly absent a description of new methodologies for filling a gelatin projectile with powder.

Thus, Carbone does not disclose the structural elements recited in new Claims 193 and 203, including those suggested by the Examiner during the in-person interview.

Because 35 U.S.C. § 102(b) requires that a single reference disclose "each and every element" of a claimed

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invention for anticipation⁵ and since every element of new Claims 193 and 203 are not disclosed by Carbone, Carbone does not anticipate Claims 193 and 203.

With respect to new Claims 194-202 and 204-212, which depend variously on new Claims 193 and 203, it has been shown above that new Claims 193 and 203 are not anticipated by Carbone; thus, new Claims 194-202 and 204-212 should not be anticipated by Carbone by virtue of at least their dependency.

It is therefore respectfully submitted that to the extent the present rejection may be thought to apply to new claims 193 through 212, such rejection is overcome.

3. In paragraph 8 of the Office Action, Claims 115-117, 122, 126-129, 131 and 132 stand rejected under 35 U.S.C. § 103(a), as being unpatentable over U.S. Patent No. 5,361,700 (Carbone).

Claims 101, 105-107 and 186 have been canceled and new Claims 193-212 have been added.

With respect to new independent Claims 193 and 203, Carbone does teach or suggest a projectile containing a powdered substance. With respect to new Claim 193, Carbone does not teach or suggest that the powdered inhibiting substance comprises a powdered capsaicinoid as claimed by Applicants; with respect to new Claim 203, Carbone does not teach or suggest that the powdered inhibiting substance comprises a powdered pepper substance as claimed by Applicants.

As described above, Carbone suggests only liquid and gas-filled projectiles, not powder-filled projectiles.

The term "pepper," as is understood in law enforcement and in the context of its usage in Carbone as an

⁵W.L. Gore & Associates v Garlock, Inc., 220 USPQ 303,313 (Fed. Cir. 1983), cert denied, 469 U.S. 851 (1984). MPEP 2131.

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irritant, is properly interpreted as a liquid or fluid substance, not a powder substance. Furthermore, Carbone, at most, only teaches one of ordinary skill in the art how to fill or load a gelatin projectile with paint (liquid) by referring to the fact that such fluid-containing projectiles are known in the art. Carbone does not enable one of ordinary skill in the art how to fill or load a powder substance into a projectile.

Carbone does not teach a novel projectile, nor teach using a novel powdered irritant in a projectile, Carbone is focused on and only teaches an improved structure for launching existing liquid-filled gelatin projectiles from a powder charge-ignited cartridge.

Carbone's cartridge includes a ball-holder-fan unit that separates from the ball upon launching, expands into a fan-like shape and harmlessly falls to the ground. Thus, Carbone provides a solution to the problem of structures other than the projectile that are ejected from a charge-ignited cartridge and that potentially injure bystanders by teaching a ball-holder-fan unit that harmlessly drops to the ground after launch.

In contrast, Applicants provide a new projectile that contains a *powdered-inhibiting substance* that comprises a *powdered pepper substance* (as recited in new Claim 203) or a *powdered capsaicinoid* (as recited in new Claim 193).

As will be further appreciated in view of the evidence of secondary considerations presented below, the powdered inhibiting substance provides significant non-obvious advantages and uses over the known liquid-filled projectiles such as suggested by Carbone.

Specifically, Applicant's use of a powdered inhibiting substance solves many problems associated with liquid-filled projectiles, e.g., the problems of poor dispersal

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of the known liquid-filled projectiles.

Furthermore, Carbone does not teach or suggest that the projectile is *without a cartridge containing an ignitable powder for launching the projectile*, as recited in new Claim 203. As will be further appreciated in view of the evidence of secondary considerations presented below, this structural difference provides significant non-obvious advantages over ignited-powder, cartridge-launched projectiles.

Additionally, Carbone does not teach or suggest the percentage of the volume within the projectile to be filled with the inhibiting substance as recited in new independent Claims 193 and 203. Applicants recite that the *powdered substance occupies at least about 50% of the volume within the shell of the projectile*. The problem addressed by this structure is to ensure adequate dispersion of the powdered substance upon impact in order that a living being is affected by the powdered substance.

The Vasel declaration and its attached FIGS. 1 through 3 prove that the amount of powder fill within the projectile affects the radial dispersion of the powder cloud. Impacted with the same force, a projectile with less than about 50% powder fill (or with any amount of liquid fill) does not disperse as a cloud that covers as large a volume as a projectile having at least about 50% powder fill.⁶ As explained in Applicants' specification, this is somewhat counter-intuitive since one would think that less powder may disperse more widely than more powder, since with higher fills, the powder is more closely packed together and may tend to release as clumps upon impact.⁷

⁶Vasel, 2 and FIG. 2.

⁷U.S. Patent Application No. 09/289,258, page 31, line 31 through page 33, line 5.

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In the Vasel declaration, Vasel states his belief that it is counterintuitive and surprising that a higher powder fill provides a larger radial dispersion.⁸ Vasel states that it may be intuitive that the radial dispersion (i.e., the powder cloud) is denser at higher fills, but not intuitive that the radial dispersion *occupies a larger volume*.⁹ Vasel states that the powder particles generally disperse with angular velocities that are generated as a function of the impact momentum of the projectile.¹⁰ With differing powder fills, these angular velocities should be about the same.¹¹ Thus, Vasel believes that at fill rates of at least about 50%, additional forces are generated that increase the angular velocities of the powder particles beyond that generated as a result of the impact momentum alone.¹² For example, Vasel states that with higher powder fills, more air is trapped between the powder particles and; thus, upon impact, the air is compressed and exerts an additional angular velocity upon the powder particles causing them to radially disperse into a larger volume.¹³ Regardless of the exact explanation, FIG. 2 of the Vasel declaration proves that with powder fills of at least about 50%, the resulting powder dispersion increases in overall volume.¹⁴

Advantageously, higher volume powder dispersion enables the projectile to impact, for example, the chest (or

⁸Vasel, 18.

⁹Id.

¹⁰Id.

¹¹Id.

¹²Id.

¹³Id.

¹⁴Vasel, 12 and FIG. 2.

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other area of the body) of a living being, e.g., a person, and still disperse powder to reach the mouth, nose and/or eyes of the person, thus avoiding the need to impact the person in the face. The higher volume powder dispersion also enables impacting the projectile to be targeted at a surface proximate to the person, e.g., a wall or a ceiling near the person, and still inhibit the person with the powder.

In contrast, FIG. 1 of the Vasel declaration shows that a liquid-filled projectile, otherwise similar to the powder-filled projectile used in FIG. 2 of the Vasel declaration, releases into a localized spot on the target upon impact, regardless of the level of liquid fill.¹⁵ At best, there may be some drops that splatter away from the localized spot, but nothing approaching the cloud generated by Applicants' invention is generated.¹⁶ As the liquid fill is increased from less than 50% full to at least about 50% full and above, the corresponding spot generally does not increase in overall size, and no cloud is generated.¹⁷ Thus, although the amount of liquid that is delivered to the spot may be increased, the amount of liquid dispersion does not increase, i.e., the size of the liquid spot remains about the same, and no cloud is generated.¹⁸ In other words, the most that can be said about liquid-filled projectiles is that the greater the fill of a liquid-filled projectile, the more concentrated the liquid spot is upon impact.¹⁹ In contrast, Applicants have discovered the unexpected and counterintuitive fact that the greater the fill

¹⁵Vasel, 10 and FIG. 1.

¹⁶Vasel, 9.

¹⁷Vasel, 10 and 15 and FIG. 1.

¹⁸Id.

¹⁹Id.

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of a powder-filled projectile, the greater the volume of the resulting powder cloud.²⁰

Thus, the Vasel declaration proves that increasing fill of a liquid-filled projectile versus increasing fill of a powder-filled projectile produces unexpected, counterintuitive and different results. Thus, advantageously, Applicants projectile does not have to be impacted at a facial region of a person in order to deliver its powdered substance to the person's facial region, i.e., mouth, nose and/or eyes.²¹

In sum, neither the recited minimum powder fill nor the problem addressed and solved by the recited minimum powder fill is shown or suggested by Carbone. As such, since Carbone does not teach a projectile containing a powdered substance and does not teach that the powdered substance occupies at least about 50% of the volume within the projectile, and also does not teach the problem to be solved by this percent volume fill (i.e., the radial dispersion of the powdered substance is enhanced due to the percentage of the volume occupied by the powdered substance), it is respectfully submitted that Carbone does not render new Claims 193 and 203 obvious.

Further, Carbone does not disclose or suggest that the frangible projectile is without a cartridge containing an ignitable powder for launching the projectile, as recited in new Claim 203. Carbone specifically discloses a ball that is launched using an ignitable powder from a cartridge including a ball-holder-fan unit (13, 17). The ball-holder-fan unit separates from the ball upon launching, expands into a fan-like shape and harmlessly falls to the ground. The ball and the ball-holder-fan unit are launched by igniting the ignitable

²⁰Vasel, 12 and 16 and FIG. 2.

²¹Vasel, FIGS. 2 and 3.

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powder charge (7) within the cartridge. Thus, the cartridge is fired from a shotgun or other firearm through the ignition of gun powder. Nowhere does Carbone show or suggest, in contrast to what is recited in new Claim 203, that the projectile or ball can be without a cartridge containing an ignitable powder for launching the projectile. (In fact, Carbone's invention, i.e., the ball-holder-fan unit, would be useless if Carbone's projectile were without a cartridge.)

Furthermore, in contrast to what is recited in new Claims 193 and 203, Carbone does not suggest that the projectile include a shell that is a rigid frangible shell or a rigid plastic material. Carbone only discloses projectiles that are made of a gelatin material (similar to that used in vitamin E gels. (Such gelatin material projectiles are unsuitable for use with powder-filled projectiles, such as are claimed by Applicants, at least without additional disclosure as to how such gelatin material projectiles could be filled with a powder.)

Since Carbone does not teach or suggest a projectile containing an *inhibiting substance* that comprises a *powdered capsaicinoid* or a *powdered pepper substance*, nor does Carbone teach or suggest the recited minimum fill percentage, nor does Carbone teach a projectile without a cartridge for launching the projectile, nor does Carbone teach a rigid frangible projectile or rigid plastic material, nor does Carbone teach the same problems solved by the recited structure of new Claims 193 and 203, it is respectfully submitted that Carbone does not render new Claims 193 and 203 obvious.

Since new Claims 194-202 and 204-212 depend variously upon new Claims 193 and 203, new Claims 194-202 and 204-212 should not be rendered obvious by Carbone at least by virtue of their dependency.

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Secondary Considerations

With further respect to new Claims 193-212, Applicants submit herewith evidence of secondary considerations, i.e., Commercial Success and Long-Felt but Unsolved Need. This evidence is submitted in the form of the following declarations under 37 C.F.R. § 1.132: declaration of Charles N. Mills, declaration of Michael R. Wagg, declaration of Charles Campe, declaration of Craig L. Beery, declaration of Roger E. Behrendt, declaration of Edward J. Vasel, and a copy of the declaration of Charles S. Heal. The Heal declaration was originally filed in the Amendment filed June 23, 1998 during the prosecution of U.S. Patent No. 5,965,839 (Vasel et al.), to which the present application claims priority under 35 U.S.C. § 120. Also submitted to support this secondary evidence are Exhibits A and B, attached hereto, which are collections of magazine/journal articles and newspaper articles, respectively. Furthermore, also submitted is Exhibit C, which is an excerpt of testimony given by Dr. Paul Freedenberg at a Senate Banking Committee hearing chaired by Senator Phil Gramm of Texas.²² Dr. Freedenberg is a former Under Secretary of Commerce and the Director of Government Relations for the Association of Manufacturing Technology. This testimony evidences both that there is a need for the technology that is the subject of Applicants' invention, and that Applicants' invention is recognized as a solution to this need.²³

Commercial Success

Affidavits or declarations containing evidence of

²²Testimony of Dr. Paul Freedenberg before the Senate Banking Committee chaired by Senator Phil Gramm February 7, 2001, pages C1-C3.

²³Exhibit C, pgs. C2-C3.

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commercial success and/or long-felt but unsolved needs must be considered by the examiner in determining the issue of obviousness of claims for patentability under 35 U.S.C. § 103.²⁴ "Thus, evidence rising out of the so-called 'secondary considerations' must always be considered en route to a determination of obviousness.... Indeed, evidence of secondary considerations may often be the most probative and cogent evidence in the record.²⁵ It may often establish that an invention appearing to have been obvious in light of the prior art was not."²⁶ "Since at least *Graham v. John Deere Co.*,...the commercial success of a patented invention is clearly important.²⁷ That evidence is 'secondary' in time does not mean that it is secondary in importance."²⁸

Evidence of commercial success of the Pepperball™ system (hereinafter referred to as the "Pepperball™ product" or the "product") as sold by Jaycor Tactical Systems, Inc. (hereinafter referred to as "JTS") is presented herewith. The Pepperball™ product is one embodiment of the claimed invention of the present application. The product is a non-lethal projectile launched from a compressed gas launcher very similar to conventional paintball launcher technologies. The launched projectile is a frangible, ball-shaped projectile that contains a powdered substance that comprises powdered inhibiting substance that is a pepper substance. For example, the projectile contains a powdered version of capsaicin, i.e., an

²⁴MPEP 716.01(a)

²⁵*Stratoflex, Inc. v. Aeroquip Corp.* 713 F.2d 1530, 1538, 218 USPQ 871, 879 (Fed. Cir. 1983). MPEP 716.01(a).

²⁶Id.

²⁷*Truswal Systems Corp. v. Hydro-Air Engineering Inc.* 813 F.2d 1207, 1212, 2 USPQ2d 1034, 1038 (Fed. Cir. 1987).

²⁸Id.



active ingredient or capsaicinoid within oleoresin capsicum (OC). In liquid form, oleoresin capsicum is the irritant commonly used as "pepper" spray. Upon impact with the target, the projectile ruptures, radially dispersing the powder contents forming a cloud that the target inhales. The pepper inhibiting substance or irritant causes involuntary coughing/gagging and a temporary inability to breathe such that the target may be easily detained by law enforcement.

Competing products available on the market for less-lethal and non-lethal systems include tasers²⁹ (stun devices) that administer an electrical charge to the target, spray canisters delivering a liquid OC spray³⁰ (i.e., "pepper spray"), tear gas³¹, bean bag shotgun rounds³² for conventional shotguns that fire a bean bag-like projectile from a shotgun shell (also referred to as bean bag shotguns), and 37mm/40mm projectile launchers³³ that launch kinetic rounds (bean bags, rubber bullets, wooden dowels, etc.) and chemical rounds. The chemical rounds for the 37mm/40mm are large projectiles that are designed to impact through windows, doors and other barriers.³⁴ These chemical rounds also include a secondary charge to explode the projectile once it has landed, thus, dispersing the chemical agent, either a powdered or liquid agent or a tear gas.³⁵

²⁹Mills, 6; Wagg, 5; Campe, 5.

³⁰Id.

³¹Id.

³²Id.

³³Mills, 19; Wagg, 22; Campe, 5-6.

³⁴Mills, 19; Wagg, 22.

³⁵Id.

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The Beery and Behrendt declarations evidence gross commercial sales of \$3,098,130 for the Pepperball™ product from January 2000 through the end of June 2001.³⁶ These sales include revenue from compressed gas launchers, inhibiting projectiles, training projectiles, accessories and training revenues.³⁷ It is estimated that from August 2000 through the end of May 2001, about 50% of the total sales are due to the various projectiles³⁸ and the other 50% is due to the launchers, accessories and training revenues.³⁹ Of the projectile sales, about 54% of the total revenue is due to sales of the "red" projectiles, i.e., the projectiles containing the powdered oleoresin capsicum.⁴⁰ Thus, from August 2000 to May 2001, JTS has sold over 413,000 red projectiles for about \$567,227 in sales, which is about 27% of the gross sales during this period from August 2000 to May 2001.⁴¹ The price of these red projectiles varies from \$1.12 to \$1.60 per round depending on the quantity ordered.⁴²

Additionally, within the last 18 months, the Pepperball™ product has been sold to over 500 law enforcement agencies nationwide.⁴³ This number is quite impressive in comparison to various competitors. For example, Taser International, Inc. has sold its taser device to about 400

³⁶Beery, 6; Behrendt, 4.

³⁷Id.

³⁸Beery, 8 ; Behrendt, 6.

³⁹Id.

⁴⁰Beery, 9; Behrendt, 6.

⁴¹Beery, 7; Behrendt, 5.

⁴²Id.

⁴³Beery, 10; Behrendt, 7.

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agencies since 1993⁴⁴ and Sage Co., Applicants believe, has only sold its projectiles for 37 mm and 40 mm launchers to about 110 agencies in the last 10 years.⁴⁵ Furthermore, in addition to the 500 agencies that have already purchased the product, Applicants have product quotes out to about 140 more law enforcement agencies.⁴⁶ Applicants have also found that a startling 97% of product quotes result in eventual sales of the product.⁴⁷ This shows a very high level of acceptance of the product by law enforcement once exposed to the product. Applicants also note that the bean bag shotgun devices and liquid pepper spray devices have been used for many years and are probably used in about half of the law enforcement agencies nationwide.⁴⁸ While these technologies have existed for many years, it is submitted that the rate at which the Pepperball™ product is purchased by law enforcement is unusually high within a very short period of time.

In order to rely on evidence of commercial success to support the patentability of a claim, the owner of the claim must establish a nexus between the claim and the evidence of commercial success.⁴⁹ In order to establish this required nexus, Applicants submit evidence to prove that the commercial success is commensurate in scope with the claimed invention, i.e., the commercial success is due to features of the product

⁴⁴Beery, 10.

⁴⁵Id.

⁴⁶Beery, 14; Behrendt, 11.

⁴⁷Id.

⁴⁸Beery, 11; Behrendt, 7.

⁴⁹*Medtronic, Inc. v. Intermedics, Inc.*, 799 F.2d 734, 230 USPQ 641 (Fed. Cir. 1986). MPEP 716.03.

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that are recited in the invention as claimed.⁵⁰ Additionally, Applicants also submit evidence to prove that the commercial success is derived from the claimed invention, not derived from or due to other factors, such as an extensive advertising or marketing campaign.⁵¹

The Mills, Wagg, Campe and Vasel declarations, as well as the articles of Exhibits A and B, prove that the commercial success of the product is due to features of the invention that are claimed. Mills, Wagg and Campe state that the product is very effective and practical in many more uses and applications than existing products on the market.⁵² Each declarant also states that they believe there are several features of the product that make it so effective.⁵³

One of the reasons the product is so effective, as provided by the declarants, is the fact that the product delivers a powdered irritant or chemical agent to the target.⁵⁴ This powdered irritant forms a cloud that surrounds or encompasses the target.⁵⁵ The target is then affected by the powdered irritant⁵⁶ and experiences a temporary inability to breathe.

Each declarant also describes many benefits provided by the powdered irritant. Since a powder cloud is formed, the projectile does not have to impact the living being in the face

⁵⁰MPEP 716.03(a).

⁵¹MPEP 716.03(b).

⁵²Mills, 5, 10 and 27 ; Wagg, 4 and 8; Campe, 4 and 12.

⁵³Mills, 12; Wagg, 12; Campe, 13.

⁵⁴Mills, 13; Wagg, 14; Campe, 14.

⁵⁵Id.

⁵⁶Id.

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to contact the mouth, nose, and/or eyes of the living being as would be required if a liquid-containing projectile were employed.⁵⁷ Thus, the powder-containing projectile may be impacted at all parts of the body of the living being, e.g., chest, arms, legs, shoulder, hands, etc.⁵⁸ Furthermore, the projectile may be impacted against a target proximate to the living being and the product is still effective.⁵⁹ For example, the product may be impacted against a wall, a ceiling or the ground in front of the living being, producing a cloud that the living being inhales.⁶⁰

Furthermore, although no products similar to that described in the Carbone patent exist on the market, each declarant opined the effectivity of a projectile similar to the PepperballTM projectile, however, containing a liquid irritant, as opposed to a powdered irritant. Each declarant states that a projectile containing a liquid irritant would not be nearly as effective as an identical projectile containing a powdered irritant⁶¹, primarily since the liquid irritant would not disperse radially as a cloud upon impact, like a powdered irritant.⁶² A liquid irritant physically cannot disperse as a cloud upon impact. The liquid irritant would splatter against the impacted location or simply soak into the impacted location.⁶³ Thus, in order to be effective, the liquid-filled

⁵⁷Mills, 14; Wagg, 15; Campe, 15.

⁵⁸Id.

⁵⁹Mills, 15; Wagg, 16; Campe, 16; Exhibit B, p. B52.

⁶⁰Id.

⁶¹Mills, 20; Wagg, 23; Campe, 21.

⁶²Id.

⁶³Id.

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projectile would not only have to strike the living being, but would have to strike the living being's face, thus, increasing the risk of serious harm to the living being.⁶⁴ In contrast, since the powder disperses into a cloud upon impact, the powder-containing projectile can impact many portions of the body and even areas next to the body and still be very effective.⁶⁵ Thus, the claimed projectile provides a significant advantage to customers because unlike Carbone it contains a powder.

Furthermore, the declaration of Edward J. Vasel (hereinafter referred to as the Vasel declaration) illustrates test results of the dispersion of powder-filled projectiles, in comparison to the dispersion of liquid-filled projectiles, upon impact with a living being. As shown in FIGS. 1 through 3 of the Vasel declaration, the powder-filled projectiles impacted on the chest of a living being disperse as a cloud that the living being would easily inhale⁶⁶, whereas the liquid-filled projectiles disperse as a localized spot on the chest of the living being.⁶⁷

Thus, the liquid-filled projectiles of Carbone do not disperse as a cloud and would not contact the mouth, nose and/or eyes of the living being unless the living being was impacted in the face.⁶⁸ Thus, in order to be effective, a liquid-filled projectile would have to impact the facial region of the living being, which increases the risk of harm or

⁶⁴Id.

⁶⁵Mills, 14; Wagg, 15; Campe, 15.

⁶⁶Vasel, FIG. 2.

⁶⁷Vasel, FIG. 1.

⁶⁸Vasel, 9 and FIG. 1.

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serious injury to the living being.⁶⁹

Additionally, another benefit of the powdered irritant is that the powdered irritant cleans up easily.⁷⁰ The living being is decontaminated by simply brushing or dusting off the living being, rather than using chemical washes or medical treatment prior to bringing the living being to the Police Station.⁷¹ In contrast, liquid OC from spray canisters sticks to the target and is difficult to wash off.⁷² Also, the powdered substance minimizes cross contamination, i.e., the effect of the irritant on law enforcement personnel and other unintended persons.⁷³ Since the powder cloud settles quickly and easily brushes off, officers are less likely to be affected.⁷⁴ Furthermore, officers do not require special equipment, such as gloves and/or gas masks to detain the living being.⁷⁵ With liquid irritants, e.g., from OC spray canisters, officers may become affected when handling the living being. If the officer touches his or her mouth or eyes, the officer must also be decontaminated.⁷⁶ Also, tear gas takes time to disperse from an area such that the officer must wear a gas mask when detaining a suspect.⁷⁷

Another reason that the Pepperball™ product is

⁶⁹Mills, 20; Wagg, 23; Campe, 21.

⁷⁰Mills, 17; Wagg, 19; Campe, 18.

⁷¹Mills, 17; Wagg, 19; Campe, 18; Exhibit A, p. A8.

⁷²Id.

⁷³Mills, 16 and 17; Wagg, 17, 19 and 25; Campe, 17 and 18.

⁷⁴Id.

⁷⁵Mills, 17; Wagg, 19; Campe, 18.

⁷⁶Id.

⁷⁷Mills, 16; Wagg, 17; Campe, 17.

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effective, and therefore successful, is that the product delivers a chemical irritant from both short and long range safely.⁷⁸ This is in part because the projectile is launched using a compressed gas launcher⁷⁹, rather than an ignitable black powder (gunpowder) propelled launcher, such as a shotgun or other firearm. Thus, the projectile is not launched from a powder ignition cartridge or shell. The force of the impact from a compressed gas launcher is considerably less (typically over 10 times less) than the force of impact from a shotgun or other firearm.⁸⁰ In fact, bean bag shotgun rounds have proven fatal if shot at close range.⁸¹ (And, presumably, the Carbone projectiles would be equally fatal.)

In contrast, the Pepperball™ product may be fired from relatively long ranges up to point blank range.⁸² Furthermore, since the projectiles are launched from a compressed gas launcher, many projectiles may be fired in a short period of time⁸³, e.g., projectiles may be launched at rates of up to 6-12 projectiles per second.⁸⁴ This provides a greater kinetic effect since more projectiles impact the living being and increases the size of the powder cloud to be inhaled.⁸⁵

Because the Pepperball™ product has proven so

⁷⁸Mills, 22; Wagg, 27; Campe, 23.

⁷⁹Id.

⁸⁰Mills, 22; Wagg, 27; Campe 24.

⁸¹Mills, 22; Campe 23.

⁸²Mills, 22; Wagg, 27; Campe 24.

⁸³Mills, 25; Wagg, 32; Campe, 27.

⁸⁴Mills, 25; Exhibit A, pgs. A6-A7.

⁸⁵Mills, 25; Wagg, 32; Campe, 27.

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effective, many newspaper/journal articles have been and continue to be written that describe and promote the Pepperball™ product. A collection of magazine and journal articles is attached as Exhibit A and a collection of newspaper and Internet articles is attached hereto as Exhibit B. Several of these articles describe several successful uses of the product across the nation⁸⁶, including in the World Trade Organization (WTO) riots⁸⁷ in Seattle, Washington. The Pepperball™ product has been said to have made a dramatic splash in the world of law enforcement.⁸⁸

Therefore, the Mills, Wagg, Campe and Vasel declarations, as well as the various articles of Exhibits A and B, clearly show that the commercial success of the Pepperball™ produce is due to features of the product that are recited in the claims, e.g., powdered inhibiting substance, at least about 50 percent fill, without a cartridge, and the like.

Additionally, the Mills, Wagg, Campe, Beery and Behrendt declarations prove that the commercial success of the product is derived from the claimed invention, not derived from or due to other factors, such as an extensive advertising or marketing campaign.

The Beery and Behrendt declarations prove that the commercial success of the Pepperball™ product is not due to the effects of an extensive advertising or marketing campaign. Applicants have not allocated an unusual amount of resources toward advertising and marketing of the product. Applicants have advertised their product in law enforcement magazines, maintain a website, and have held area demonstrations and

⁸⁶Exhibit B, pgs. B17, B28, B61, B77, B92 and B97, for example.

⁸⁷Exhibit B, pgs. B30, B43, B56, B54 and B77, for example.

⁸⁸Exhibit B, p. B54.

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participated in trade shows.⁸⁹ From January 2000 through the end of April 2001, the funds spent on the marketing and promotion of the product are a monthly average of about 7% of the total revenue from sales.⁹⁰ Furthermore, from March 2000 through the end of April 2001, the marketing expenses were an average of about 4.6% of the total sales per month.⁹¹

The Beery and Behrendt declarations also show that the commercial success was not due to the fact that there were no barriers to sales in the market. As stated above, Beery and Behrendt believe that it is a significant feat to have sold the product to about 500 agencies in the first 18 months of sales and to have provided product quotes to about 140 more law enforcement agencies and that it is surprising that historically, 97% of all product quotes result in sales.⁹² This is particularly significant and surprising when considered in light of the fact that there are several barriers to sales in the market, i.e., there are several factors that may have limited further commercial success of the product.⁹³ These factors or barriers include the costs, both direct and indirect, of purchasing and implementing the product in law enforcement. Furthermore, JTS current sales model during the first 18 months of sales was initially designed to achieve a high quality of sales, not necessarily a high quantity of sales, and may have limited that amount of sales possible during the first 18 months.⁹⁴

⁸⁹Beery, 32; Behrendt, 30.

⁹⁰Id.

⁹¹Id.

⁹²Beery, 15; Behrendt, 12.

⁹³Beery, 15; Behrendt, 13 and 19.

⁹⁴Beery, 23; Behrendt, 26.

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Both Beery and Behrendt state that the cost of the Pepperball™ system is a factor that is barrier to potential new sales. Since the product represents an entirely new weapon using an entirely new launch platform, law enforcement agencies must purchase both launchers and projectiles, as well as other accessories, such as high pressure air bottles (HPA) for the compressed gas launchers.⁹⁵ A Pepperball™ launcher system costs between \$350 and \$450 including a launcher and several accessories, but not including the projectiles.⁹⁶ The most popular projectile launcher kit costs \$378 without projectiles. As described above, these projectiles range from \$1.12-\$1.60 per round depending on the quantity ordered.⁹⁷ The expense of the Pepperball™ product is recognized as a drawback to the product.⁹⁸

The actual costs incurred by a law enforcement agency in implementing the Pepperball™ product, including training costs, often exceeds the cost of the equipment alone, possibly as much as three time the cost of the equipment alone.⁹⁹ In addition to the cost of the equipment, the officers must be trained on how to properly use the equipment.¹⁰⁰ Each officer to be trained is pulled from the street, replaced by another officer (usually at overtime wages), and trained.¹⁰¹ The training is not as simple as training for the use of a new

⁹⁵Beery, 16-17; Behrendt, 14 and 20.

⁹⁶Beery, 17; Behrendt 20.

⁹⁷Id.

⁹⁸Exhibit B, p. B63.

⁹⁹Beery, 27.

¹⁰⁰Beery, 27; Behrendt 17.

¹⁰¹Id.

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round of a familiar weapon (e.g., a new round for a shotgun). The officer must be taught how to properly use an entirely new weapon system, as well as department policy regarding the use of the new weapon system.¹⁰² In contrast, some competing products do not have such training issues since the underlying technology is generally known and understood (e.g., bean bags launched from standard issue shot guns).¹⁰³

Another cost to law enforcement is that during the first 18 months of sales, as a prerequisite to the sale of the product, Applicants require the purchasers be trained and certified by Applicants on the correct use of the product.¹⁰⁴ These certified persons are then able to train the remaining personnel of the agency on the correct usage of the Pepperball™ product. Thus, during the first 18 months of sales, police agencies must agree to be trained and receive training prior to being able to complete the sale.¹⁰⁵ Applicants charged the agencies \$150 per person for the cost of this training.¹⁰⁶ This sales strategy is the result of Applicants desire to sell a product that can be safely used by their customers; however, may limit the amount of sales possible by adding to the cost of the purchase and implementation of the product. Again, the officers to be trained and certified must be pulled from their normal duty, replaced at overtime wages and then trained. Thus, police agencies incur a substantial cost when implementing the product. As such, Applicants submit that the actual costs of purchasing and implementing the Pepperball™

¹⁰²Id.

¹⁰³Beery, 26.

¹⁰⁴Beery, 24; Behrendt 21.

¹⁰⁵Id.

¹⁰⁶Beery, 24; Behrendt 21; Exhibit A, p. A8.

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product often exceed the cost of the equipment itself and, thus, serves as a barrier to any potential new sales of the product.

Yet another barrier to potential sales is the fact that since the customers or purchasers of the Pepperball™ product are governmental agencies, all capital expenditures (e.g., funds to purchase a brand new weapon system) must be accounted for in the agency's budget.¹⁰⁷ Often these agencies must get funding approved for such new purchases as far as a year in advance.¹⁰⁸ This greatly hinders new sales of the Pepperball™ product (particularly over the eighteen months Applicants have sold the Pepperball™ product), since the product requires a substantial cost to the agency that must be budgeted.¹⁰⁹ In some cases, an agency may decide not to purchase the product based upon the cost of the product or inability to budget the necessary funds.

Additionally, another possible barrier to potential new sales is that during the first 18 months of sales, Applicants employed a "direct sales model", rather than the traditional "distributed sales model".¹¹⁰ Rather than using hundreds of commissioned representatives or distributors that sell the product to law enforcement through vendors, Applicants have, in the last 18 months, directly sold their product to law enforcement without the use of distributors or other vendors.¹¹¹ This is due to Applicants' desire to develop a continuing relationship with their customers by providing attentive and

¹⁰⁷Beery, 19; Behrendt 15.

¹⁰⁸Id.

¹⁰⁹Id.

¹¹⁰Beery, 21; Behrendt 24.

¹¹¹Id.

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high quality service, customer satisfaction and comprehensive customer training.¹¹² Thus, Applicants have concentrated on quality of sales, rather than quantity of sales.¹¹³

Consistent with this sales strategy in the first 18 months, Applicants do not employ a large sales staff. During the period of sales from January 2000 through June 2001, Applicants total sales staff consisted of five (5) persons responsible for selling the product nationwide.¹¹⁴ Beery and Behrendt state that this sales staff does not include "salesmen" in the traditional sense.¹¹⁵ Applicants have not hired credentialed salespersons to sell the product, Applicants have hired ex-law enforcement officials to sell the product.¹¹⁶ Thus, Applicants use "cops" to sell to "cops".¹¹⁷ Therefore, since Applicants have focused their attention to fewer, higher quality sales during the first 18 months, it may have been possible for Applicants to have sold the product to even more customers during the first 18 months given a different sales approach.¹¹⁸ Nevertheless, despite Applicants' relatively small sales staff, Applicants have succeeded in selling the product to a significant number of customers.¹¹⁹

As a result and as stated above, Applicants have

¹¹²Beery, 21-23; Behrendt 24-26.

¹¹³Beery, 21; Behrendt 24.

¹¹⁴Beery, 22; Behrendt 25.

¹¹⁵Id.

¹¹⁶Id.

¹¹⁷Id.

¹¹⁸Beery, 23; Behrendt, 26.

¹¹⁹Id.

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found that 97% of all product quotes result in accepted sales.¹²⁰ Thus, out of about 140 outstanding product quotes, Applicants expect that about 135 of these 140 agencies will eventually adopt the product for use, for a total of over 600 agencies.¹²¹ This highly extraordinary acceptance rate proves the effectivity and superiority of the Pepperball™ product over other products in the market.

Rather than allocating a large amount of resources to advertising and marketing, Applicants rely heavily on word of mouth within the law enforcement community to sell the product. By way of example, in San Diego County, California, the first sale of the product was to the San Diego Sheriff's Department.¹²² Within the following year, 11 of the remaining 15 police agencies within San Diego County purchased the product.¹²³ Applicants are seeing similar results across the country.¹²⁴ Rather than devoting extraordinary resources to advertising and marketing, the product is self-promoting, which is due to the claimed features of the product, not due to other factors, and in spite of its price.

As proven by the Beery and Behrendt declarations, the commercial success of the product is not due to the presence of a long term pre-existing relationship between JTS and law enforcement agencies. JTS is a start up company spun off from Jaycor.¹²⁵ While Jaycor has a background in the military defense industry, Jaycor did not provide substantial law enforcement

¹²⁰Beery, 14; Behrendt 11.

¹²¹Id.

¹²²Beery, 30.

¹²³Id.

¹²⁴Id.

¹²⁵Behrendt, 29.

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contacts to assist JTS in selling the Pepperball™ product.¹²⁶

Additionally, as shown by the Mills, Wagg, Campe, Beery and Behrendt declarations, the commercial success of the product is not a result of the fact that there are simply no non-lethal or less-lethal products on the market. There are several less-lethal systems available to law enforcement, such as tasers¹²⁷, OC spray canisters¹²⁸, tear gas¹²⁹, bean bag shotguns¹³⁰, and 37/40 mm projectile launchers¹³¹. However, the Pepperball™ product has achieved commercial success because the product is the most effective product on the market for many more uses than competing devices.¹³²

Furthermore, the product is non-lethal, as opposed to merely less-lethal. Bean bag shotgun rounds and in some cases, 37mm/40mm projectiles have proven fatal in some uses.¹³³ In contrast, since the Pepperball™ product is launched using modified paintball technologies that have been traditionally considered non-lethal, Beery and Behrendt state that the Pepperball™ product is non-lethal in any use¹³⁴, while Mills and Wagg state that the product is non-lethal used properly¹³⁵ and Campe states that he believes the product to be as close to

¹²⁶Id.

¹²⁷Mills, 6; Wagg, 5; Campe, 5; Beery, 11; Behrendt, 7.

¹²⁸Id.

¹²⁹Id.

¹³⁰Id.

¹³¹Mills, 19; Wagg, 22; Campe, 5-6; Beery, 11; Behrendt, 7.

¹³²Mills, 10; Wagg, 34; Campe, 28-29; Beery, 38; Behrendt, 35.

¹³³Mills, 22; Beery, 39; Behrendt, 37.

¹³⁴Beery, 12; Behrendt, 37.

¹³⁵Mills, 26; Wagg, 33.

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non-lethal as a weapon system can be.¹³⁶

Thus far, Applicants have established the commercial success of the claimed projectile and have further established that the commercial success is due to features of the claimed projectile, and not principally due to marketing efforts and other external factors. Furthermore, Applicants have established a number of factors that serve as barriers to new sales, thus, preventing even further commercial success of the product. Therefore, Applicants submit that the evidence offered establishes not only the commercial success of the product, but also the required nexus between the commercial success and the claimed invention.

To be pertinent to the issue of nonobviousness, the commercial success of devices falling within the claims flows from the functions and advantages disclosed or inherent in the description in the specification.¹³⁷ For example, FIGS. 23-27 and 30-31 of the specification clearly illustrate the projectile impacting and releasing a powdered cloud of inhibiting substance. Additionally, page 22, lines 1-13 of the specification describe that the powdered substance enables indirect hits, i.e., impacting locations or surfaces next to the living target in order to inhibit the living target. Furthermore, at page 51, lines 15-28 of the specification describe that due to the powder cloud that radially disperses, the target may be impacted at locations other than the face. These are just a few examples of places in the specification that describe the functions and advantages of the claimed invention.

The Carbone reference discloses a projectile

¹³⁶Campe, 28.

¹³⁷MPEP 716.03.



containing a liquid irritant, not a powder irritant. Based upon the significant advantages of the powder verses the liquid irritant, the powder-filled projectile recited in new Claims 193 and 203 provide a truly non-lethal system that may be used in many applications. The substantial commercial success of the product proves a non-obvious difference between the claimed projectile and the Carbone projectile, as the significant value and advantages offered by Applicants' claimed projectile would surely have been exploited long ago if these advantages were apparent. Therefore, it is respectfully submitted that the evidence of commercial success is sufficient to show that Carbone does not render new Claims 193 and 203 obvious.

LongFelt but Unsolved Need

Applicants also submit evidence that the claimed invention satisfies a long-felt, but unsolved need in the art. Establishing long-felt need requires objective evidence that an art recognized problem existed in the art for a long period of time without solution. The relevancy of long-felt need and the failure of others to the issue of obviousness depends on several factors. First, the need must have been a persistent one that was recognized by those of ordinary skill in the art.¹³⁸ Second, the long-felt need must not have been satisfied by another before the invention by applicant.¹³⁹ And third, the invention must in fact satisfy the long-felt need.¹⁴⁰

The Mills, Wagg and Campe declarations and the

¹³⁸In re Gershon, 372 F.2d 535, 539, 152 USPQ 602, 605 (CCPA 1967). MPEP 716.04.

¹³⁹Newell Companies v. Kenney Mfg. Co., 864 F.2d 757, 768, 9 USPQ2d 1417, 1426 (Fed. Cir. 1988). MPEP 716.04.

¹⁴⁰In re Cavanaugh, 436 F.2d 491, 168 USPQ 466 (CCPA 1971). MPEP 716.04.

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articles of Exhibits A and B, and Exhibit C prove that there has been a persistent, recognized need in law enforcement for an effective less lethal and/or non-lethal device for patrol use in many situations.¹⁴¹ These declarations and articles also prove a persistent, recognized need for a non-lethal system that can deliver a chemical agent that is easy to use in many applications, cleans up easily and minimizes the effect on others.¹⁴² The Heal declaration proves that there has been widely known need for a non-lethal device that can be projected at a person (or other target) to aid in stopping the target, while being able to be easy to use and quickly acting.¹⁴³

The Mills, Wagg, Campe and Heal declarations and the numerous articles of Exhibits A and B prove that these needs have been addressed, but not satisfied by others.¹⁴⁴ Other attempts include tasers¹⁴⁵, chemical sprays¹⁴⁶, tear gas¹⁴⁷, bean bag shotguns¹⁴⁸ and 37mm/40mm kinetic projectile rounds¹⁴⁹. As evidenced in the declarations, each of these devices may be effective in special situations, but none are effective in a variety of different situations.¹⁵⁰

¹⁴¹Mills, 5 ; Wagg, 4 ; Campe 4; Exhibit C, pgs. C2-C3.

¹⁴²Mills, 7 ; Wagg, 6 ; Campe 7.

¹⁴³Heal, 3.

¹⁴⁴Mills, 6, 8; Wagg, 5, 7; Campe 6, 9; Heal, 15.

¹⁴⁵Mills, 6; Wagg, 5; Campe, 5.

¹⁴⁶Id.

¹⁴⁷Id.

¹⁴⁸Id.

¹⁴⁹Mills, 19; Wagg, 22; Campe, 5-6.

¹⁵⁰Mills, 6-8; Wagg, 5-7; Campe 5,8-9.

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By way of example, the taser is a "one-shot" device that must be used at relatively close range¹⁵¹, e.g., less than 20 feet, to be accurate.¹⁵² This places the officer at considerable risk of harm if the taser does not properly work. Additionally, tasers include tethered electrodes that must contact the target's skin.¹⁵³ If the target is wearing thick clothing, such as a heavy winter jacket, the electrodes may not penetrate the clothing and make contact with the target.¹⁵⁴ Also, the further away the officer is from the target, the further apart the tethered electrodes fly, increasing the likelihood that one or both of the electrodes will miss the target.¹⁵⁵

Tear gas, by way of further example, from a launched tear gas grenade, may be effective against large crowds. Since tear gas is released as a gas, it lingers in the air and flows with air currents.¹⁵⁶ The result is that many people are affected by the tear gas, not just the intended person(s).¹⁵⁷ Cross contamination is a problem with tear gas, i.e., arresting officers will be affected unless they have special equipment, such as gas masks.¹⁵⁸ Gas masks are not practical in many situations. Furthermore, it is difficult to target specific persons from within a crowd, without affecting the entire

¹⁵¹Mills, 15; Wagg, 16; Campe, 6.

¹⁵²Campe, 6.

¹⁵³Mills, 12 ; Wagg, 20 ; Campe, 6.

¹⁵⁴Wagg, 20.

¹⁵⁵Mills, 12

¹⁵⁶Mills, 16; Wagg, 17; Campe, 8.

¹⁵⁷Id.

¹⁵⁸Mills, 16; Wagg, 17; Campe, 17.

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crowd.¹⁵⁹ Since it is usually launched or thrown toward a crowd, tear gas is not an effective short range less-lethal system.

Chemical sprays, by way of yet another example, such as OC or pepper spray, are generally effective at short ranges¹⁶⁰, for example, less than 10-15 feet. This is because the officer must be close enough to accurately spray the liquid chemical agent at the target's face.¹⁶¹ Being in close proximity to the target, the officer is placed at risk for personal injury or harm if such spray is not effective.¹⁶² Additionally, in order to be effective, OC sprays must contact the target's face so that the chemical agent can contact the target's mouth, nose and/or eyes.¹⁶³ Liquid OC sprays also stick to the suspect's skin and soak into the suspect's clothes.¹⁶⁴ OC sprays typically require washing off or medical treatment to decontaminate the suspect.¹⁶⁵ Thus, the suspect may have to be taken to the hospital or receive other medical attention prior to being taken to the Police Station.¹⁶⁶ Since liquid OC sprays stick to the suspect's skin and clothes, cross contamination is a problem when officers are handling the suspect, since the officer may get some of the chemical agent on his or her fingers and then touch his or her eyes, thereby inhibiting the

¹⁵⁹Campe, 8.

¹⁶⁰Mills, 12; Wagg, 6; Campe, 8; Heal, 4.

¹⁶¹Mills, 12; Wagg, 15; Campe, 8.

¹⁶²Mills, 15; Wagg, 12; Campe, 8.

¹⁶³Mills, 14; Wagg, 15; Campe, 8; Heal, 10.

¹⁶⁴Mills, 17; Wagg, 19; Campe, 14.

¹⁶⁵Mills, 17; Wagg, 19; Campe, 18.

¹⁶⁶Id.

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officer's ability to function.¹⁶⁷

Bean bag shotgun rounds fired from conventional shotguns may be effective in long range situations, but are potentially lethal at short ranges¹⁶⁸, such as less than 20 feet¹⁶⁹. There have been several deaths resulting from bean bag shotgun projectiles.¹⁷⁰ This is in part because the projectile is fired with an ignitable black powder propellant and impacts with a high kinetic energy¹⁷¹; e.g., at about 120 ft-lbs of kinetic energy.¹⁷² Since a bean bag shotgun round is a kinetic round, not a chemical agent, it relies on kinetic impact for compliance.¹⁷³ Furthermore, after impacting someone with a bean bag shotgun round, the person must be taken to the hospital to be inspected for internal damage prior to being taken to the police station.¹⁷⁴ It is not uncommon for bean bag shotgun rounds to result in broken bones and internal injuries that are easily visible on the victim.¹⁷⁵

Tactical use 37 mm and 40 mm projectile launchers are also primarily for long range use.¹⁷⁶ At close range, these launchers can be fatal.¹⁷⁷ These projectile launchers, like

¹⁶⁷Id.

¹⁶⁸Mills, 22; Campe, 6.

¹⁶⁹Campe, 6.

¹⁷⁰Mills, 22.

¹⁷¹Id.

¹⁷²Mills, 22; Wagg, 27.

¹⁷³Mills, 24; Wagg, 27; Campe, 24.

¹⁷⁴Campe, 24.

¹⁷⁵Id.

¹⁷⁶Wagg, 22; Campe, 6.

¹⁷⁷Id.

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shotguns, launch projectiles using an ignitable gun powder.¹⁷⁸ Launched bean bags, rubber bullets and wooden dowels are kinetic rounds, without chemical agent. Other chemical-agent-containing projectiles may also be launched from these launchers.¹⁷⁹ These chemical agents are contained with the projectile.¹⁸⁰ The projectile is designed to survive impact, for example, by breaking through windows or doors.¹⁸¹ Once the projectile has impacted, a secondary charge explodes the projectile releasing the chemical agent inside.¹⁸² Such projectiles may contain tear gas, liquid irritants and powdered irritants.¹⁸³ These projectile launchers are too large and cumbersome for patrol use and are thus usually only used by tactical SWAT teams.¹⁸⁴ Furthermore, since they are designed to survive impact even breaking through doors and windows for example, these projectiles may be lethal if impacted with a person.¹⁸⁵

The Mills, Wagg and Campe declarations, as well as numerous articles in Exhibits A and B, and Exhibit C, prove that the claimed invention has satisfied these recognized needs.¹⁸⁶ The claimed invention (embodied in the Pepperball™ product) delivers a powdered inhibiting substance from both

¹⁷⁸Id.

¹⁷⁹Mills, 19; Wagg, 22; Campe, 6.

¹⁸⁰Id.

¹⁸¹Mills, 19; Wagg, 22.

¹⁸²Id.

¹⁸³Id.

¹⁸⁴Mills, 19; Wagg, 22; Campe, 6.

¹⁸⁵Wagg, 22; Campe 23.

¹⁸⁶Mills, 27-28; Wagg, 34-35; Campe, 28-29; Exhibit C, pgs. C2-C3.

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long and short ranges.¹⁸⁷ The powdered inhibiting substance provides specific advantages over liquid or gaseous chemical agents. For example, the powder disperses into a cloud that is inhaled by the target.¹⁸⁸ Also, the target may be impacted at many different parts of the body and the product remains effective.¹⁸⁹ Surfaces proximate to the target may also be impacted and the product is still effective.¹⁹⁰ The powdered cloud settles quickly and may be easily brushed off of the target.¹⁹¹ Thus, the target does not require medical attention prior to being taken to the Police Station.¹⁹² Thus, decontamination and cross contamination are minimized. Additionally, since the powdered chemical agent is delivered within a projectile, specific person(s) out of a crowd may be targeted, without affecting the entire crowd.¹⁹³ Furthermore, Mills, Wagg, Campe state that to the best of their knowledge, the PepperballTM product is the first product available on the market for patrol use that uses a powdered irritant or inhibiting substance that is delivered within a projectile¹⁹⁴, while Heal states that the PepperballTM product is the first product available on the market that uses an inhibiting substance in powder form.¹⁹⁵

¹⁸⁷Mills, 22; Wagg, 12; Campe, 13; Exhibit A, p. A7.

¹⁸⁸Mills, 9; Wagg, 14; Campe, 14.

¹⁸⁹Mills, 14; Wagg, 15; Campe, 15; Exhibit A, p. A24.

¹⁹⁰Mills, 15; Wagg, 16; Campe, 16.

¹⁹¹Mills, 16; Wagg, 17; Campe, 17.

¹⁹²Mills, 17; Campe, 18.

¹⁹³Wagg, 18.

¹⁹⁴Mills, 18; Wagg, 21; Campe, 19.

¹⁹⁵Heal, 17.

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In addition to delivering a powdered irritant, the product is capable of launch using a compressed gas launcher.¹⁹⁶ Thus, the projectile is non-lethal since the compressed gas launched projectile impacts with significantly less kinetic energy than powder ignition launchers, such as, bean bag shotgun rounds.¹⁹⁷ Therefore, the product provides a solution to the long recognized need for an effective less lethal and/or non-lethal device for patrol use in many situations.¹⁹⁸ The product also provides a solution to the recognized need for a non-lethal system that can deliver a chemical agent in many applications, e.g., long and short range use, that allows for easy decontamination and minimal cross contamination.¹⁹⁹

Furthermore, the testimony in Exhibit C of former Under Secretary of Commerce Dr. Paul Freedenberg was presented at a recent Senate Banking Committee hearing establishes both that there is a need for the technology that is the subject of Applicants' invention, and that Applicants' invention is recognized as a solution to this need.²⁰⁰ These Hearings were held to discuss the re-authorization of the Export Administration Act over which the Banking Committee has jurisdiction in the Senate. The excerpt involves the prompt processing of "commodity jurisdiction" determinations as to whether a new product for export is subject to a license under the Department of Commerce's Export Administration Regulations or the Department of State's International Traffic in Arms

¹⁹⁶Mills, 9; Wagg, 9; Campe, 10.

¹⁹⁷Mills, 22; Wagg, 27; Campe, 23.

¹⁹⁸Mills, 27; Wagg, 34; Campe, 28.

¹⁹⁹Mills, 28; Wagg, 35; Campe, 29.

²⁰⁰Exhibit C, pgs. C2-C3.

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Regulations.²⁰¹ Specifically, the Pepperball™ product is used as an example of a new product that is generating interest among U.S. law enforcement agencies "because of its great effectiveness".²⁰² "As a credible alternative to a firearm, it has, over the past year, been used in several hundred instances to successfully quell violent suspects without resorting to lethal force."²⁰³ However, the process of making this product available for export has been hindered by the delay in the commodity jurisdiction determination.²⁰⁴ It is further testified that international use of the Pepperball™ product may save lives, in particular, may have saved lives in recent disturbances in Israel.²⁰⁵

Applicants submit that the claimed invention offers a solution to recognized long-felt but unsolved needs in the art, and, as a result, the Pepperball™ product has become commercially successful. The fact that the Pepperball™ product has in fact satisfied these recognized needs proves that the Pepperball™ product represents a non-obvious improvement over the known art. Had the solution provided by the present invention been obvious, the means and the need having been available, such solution would very long ago have been brought to public knowledge and use, and commercially exploited.

Therefore, with respect to new Claims 193 and 203, Applicants respectfully submit that the evidence of the satisfaction of a Long-Felt Need solved by the product as

²⁰¹Id.

²⁰²Id.

²⁰³Exhibit C, p. C3.

²⁰⁴Exhibit C, pgs. C2-C3.

²⁰⁵Exhibit C, p. C3.



claimed and the resulting Commercial Success of the product as claimed show that Carbone does not render new Claims 193 and 203 obvious. Since new Claims 194-202 and 204-212 depend on new Claims 193 and 203, Applicants submit that the any rejection under 35 U.S.C. § 103(a) is overcome.

4. In paragraph 9 of the Office Action, Claims 102, 130 and 187 stand rejected under 35 U.S.C. § 103(a), as being unpatentable over U.S. Patent No. 5,361,700 (Carbone) in view of U.S. Patent No. 5,750,918 (Mangolds et al.).

Claims 102, 130 and 187 have been canceled.

With respect to new independent Claims 193 and 203, Applicants have shown above that new Claims 193 and 203 are not rendered obvious by Carbone in view of the recited structural limitations and in view of the evidence of Commercial Success and a Long-Felt Need solved by the claimed invention. Mangolds et al. teach only that oleoresin capsicum is an irritant recognized in the art. This has also been attested to in the Mills, Wagg, Campe and Heal declarations.²⁰⁶ Furthermore, Mangolds et al. do not provide any further teaching related to the fill of a powder-filled projectile or the problems solved by the recited fill.

Since Mangolds et al. do not provide further teaching in combination with Carbone that render new Claims 193 and 203, or new dependent Claims 194-202 and 204-212 obvious, it is respectfully submitted that any rejection on this basis is overcome.

5. In paragraph 10 of the Office Action, Claims 102-104 and 123 stand rejected under 35 U.S.C. § 103(a), as

²⁰⁶Mills, 6; Wagg, 6; Campe 8; Heal, 2.

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being unpatentable over U.S. Patent No. 5,361,700 (Carbone) in view of U.S. Patent No. 5,821,450 (Fedida).

Claims 102-104 and 123 have been canceled and new Claims 193-212 have been added.

The filing date of Fedida is March 31, 1997. The present application is a continuing application of and claims priority under 35 U.S.C. § 120 to the Vasel et al. patent (U.S. Patent No. 5,965,839). Applicants submit that the subject matter recited in new Claims 193 and 203 is supported by the Vasel et al. patent and; thus, this subject matter is entitled to the priority of the filing date of the Vasel et al. patent, i.e., November 18, 1996.

Although Fedida teaches irritants for projectiles, Fedida does not disclose or teach any specific fill percentages, nor any problems associated with different fills. In contrast, Applicants recite that the *inhibiting substance occupies at least about 50% of the volume within the projectile*. This structural limitation, not taught by Fedida enhances the radial dispersion of the powdered substance upon impact. As is better appreciated in view of the Vasel declaration presented above, this structural difference represents a nonobvious difference between the teachings of Fedida and the present claims.

Fedida teaches using "capsules which act as a charge for a munition such as a grenade, the explosion of which distributes the charge, and thus, the incapacitating composition over an area or volume".²⁰⁷ Thus, in order to distribute the composition over an area or volume, Fedida teaches a charge to explode the capsule, **and does not teach increasing the fill percentage or maintaining a minimum fill**

²⁰⁷Fedida, Col. 4, lines 60-63.

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percentage of the capsule.

Thus, Fedida teaches away from the recited claim limitation since according to Fedida, in order to disperse the composition, an exploding charge is used, and does not contemplate other techniques, such as contemplated by Applicants, i.e., providing a projectile having an *inhibiting substance that occupies at least about 50% of the volume* of its shell. Thus, since Fedida does not teach this recited minimum fill percentage limitation, nor the problem and solution provided by this recited limitation, Fedida, alone or in combination with Carbone, does not render new Claims 193 and 203 obvious.

Furthermore, Applicants have shown above that new Claims 193 and 203 are not rendered obvious by Carbone in view of the evidence of Commercial Success and a Long-Felt Need solved by the claimed invention. This showing is equally applicable to the Fedida reference. Thus, it is respectfully submitted that any rejection on this basis is overcome. New Claims 194-202 and 204-212 are not rendered obvious by the combination of Carbone and Fedida due to at least their dependency upon respective ones of new Claims 193 and 203.

6. In paragraph 11 of the Office Action, Claims 108, 112, 114-117 and 126-129 stand rejected under 35 U.S.C. § 103(a), as being unpatentable over U.S. Patent No. 5,361,700 (Carbone) in view of U.S. Patent No. 5,353,712 (Olson).

Claims 108, 112, 114-117 and 126-129 have been canceled.

With respect to new independent Claims 193 and 203, Applicants have shown above that new Claims 193 and 203 are not rendered obvious by Carbone in view of the recited limitations and in view of the evidence of Commercial Success and a Long-

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Felt Need solved by the claimed invention. Olson only teaches internal score lines on a projectile to enhance fragmentation. Also, Olson only teaches the use of colored, non-toxic liquids within its projectile, not powdered materials, nor does Olson teach specific powder fill percentage.

Since Olson does not provide further teaching in combination with Carbone to render new Claims 193 and 203, as well as new dependent Claims 194-202 and 204-212 at least by virtue of their dependency, obvious in view of recited limitations and the presented secondary considerations, it is respectfully submitted that any rejection on this basis is overcome.

7. In paragraph 12 of the Office Action, Claims 118 and 119 stand rejected under 35 U.S.C. § 103(a), as being unpatentable over U.S. Patent No. 5,361,700 (Carbone) in view of U.S. Patent No. 5,450,795 (Adelman).

Claims 118 and 119 have been canceled. With respect to new independent Claims 193 and 203, Applicants have shown above that new Claims 193 and 203 are not rendered obvious by Carbone in view of the recited limitations and in view of the evidence of Commercial Success and a Long-Felt Need solved by the claimed invention. Adelman only teaches the use of metal powders within a projectile to enhance ballistics.

Since Adelman does not provide further teaching in combination with Carbone to render new Claims 193 and 203, as well as new dependent Claims 194-202 and 204-212 at least by virtue of their dependency, obvious in view of recited limitations and the presented secondary considerations, it is respectfully submitted that any rejection on this basis is overcome.



8. In paragraph 13 of the Office Action, Claims 115-117 and 124-129 stand rejected under 35 U.S.C. § 103(a), as being unpatentable over U.S. Patent No. 5,361,700 (Carbone) in view of U.S. Patent No. 5,018,450 (Smith).

Claims 115-117 and 124-129 have been canceled.

With respect to new independent Claims 193 and 203, Applicants have shown above that new Claims 193 and 203 are not rendered obvious by Carbone in view of the recited limitations and in view of the evidence of Commercial Success and a Long-Felt Need solved by the claimed invention. Smith teaches forming a frangible capsule of two hemispheres. Each of the two hemispheres is filled with different liquid substances that are separated by membranes. Upon impact, the two liquids mix to form a luminescent liquid (i.e., a glow in the dark liquid). Smith teaches that the two liquids are separated since, if they are allowed to mix prior to impact, the reaction when fully mixed is degraded. Smith only teaches the use of colored liquids within its projectile for paintball games, not *powdered* materials. Furthermore, Smith teaches a *liquid* fill greater than 50%, *not a powder fill at least about 50%* as recited in new Claims 193 and 203. Smith teaches its liquid fill merely out of coincidence and not for reasons of increasing or enhancing the radial dispersion. Thus, Smith does not provide any further teaching related to the fill of a *powder*-filled projectile or the problems solved by the recited minimum powder fill percentage.

Since Smith does not provide further teaching in combination with Carbone to render new Claims 193 and 203, as well as new dependent Claims 194-202 and 204-212 at least by virtue of their dependency, obvious in view of the recited claim limitations and the presented secondary considerations, it is respectfully submitted that any rejection on this basis

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is overcome.

9. In paragraph 14 of the Office Action, Claim 188 stands rejected under 35 U.S.C. § 103(a), as being unpatentable over U.S. Patent No. 5,361,700 (Carbone) in view of U.S. Patent No. 5,640,945 (Slonacker et al.).

Claim 188 has been canceled. With respect to new independent Claims 193 and 203, Applicants have shown above that new Claims 193 and 203 are not rendered obvious by Carbone in view of the recited limitations and in view of the evidence of Commercial Success and a Long-Felt Need solved by the claimed invention. Slonacker et al. simply teach that it is known to fire paintballs from a compressed gas launcher, but does not further suggest or teach the projectile as recited in new Claims 193 and 203.

Thus, Since Slonecker et al. do not provide further teaching in combination with Carbone to render new Claims 193 and 203, as well as new dependent Claims 194-202 and 204-212 at least by virtue of their dependency, obvious in view of the recited claim limitations and the presented secondary considerations, it is respectfully submitted that any rejection on this basis is overcome.

10. In paragraph 15 of the Office Action, Claims 189 and 190 stand rejected under 35 U.S.C. § 103(a), as being unpatentable over U.S. Patent No. 5,361,700 (Carbone) in view of U.S. Patent No. 5,640,945 (Slonacker et al.) and U.S. Patent No. 4,856,218 (Reynolds Jr.).

Claims 189 and 190 have been canceled.

With respect to new independent Claims 193 and 203, Applicants have shown above that new Claims 193 and 203 are not rendered obvious by Carbone in view of the recited limitations

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and in view of the evidence of Commercial Success and a Long-Felt Need solved by the claimed invention. Slonacker et al. simply teach that it is known to fire paintballs from a compressed gas launcher, but does not further suggest or teach the powder-filled projectile as recited in new Claims 193 and 203. Additionally, Reynolds Jr. only teaches that it is known to use a flashlight on a launcher to illuminate a target and does not further suggest or teach the powder-filled projectile as recited in new Claims 193 and 203.

Thus, it is respectfully submitted that since Slonecker et al. and Reynolds Jr. do not provide further teaching in combination with Carbone to render new Claims 193 and 203, as well as new dependent Claims 194-202 and 204-212 at least virtue of their dependency, obvious in view of the presented secondary considerations, it is respectfully submitted that any rejection on this basis is overcome.

11. In paragraph 16 of the Office Action, Claims 101, 102, 105-107 and 186-190 stand rejected under 35 U.S.C. § 102(e), as being anticipated by U.S. Patent No. 5,965,839 (Vasel et al.).

Claims 101, 102, 105-107 and 186-190 have been canceled and new Claims 193-212 have been added.

Applicants note that the present application claims priority under 35 U.S.C § 120 to the Vasel et al. patent. In order for a reference to constitute prior art under 35 U.S.C. § 102, the teachings of every element of the claimed invention must be within the four corners of the reference. In this case, if the teachings are shown within the four corners of the reference, i.e., the Vasel et al. patent, then, because the present case is entitled to the priority filing date of the Vasel et al. patent for all that is shown in the Vasel et al.



patent, by-definition, the claims at issue are entitled to a filing date that is the same as the filing date of the Vasel et al. patent. Under 35 U.S.C. § 102(e), a valid reference is required to have a filing date prior to the invention date of the subject claims. Because the subject claims have a filing date that is the same as the filing date of the Vasel et al. patent, and because the subject matter of such claims by-definition must have been invented before the patent application on such subject matter was filed, Vasel et al. is not an anticipating reference under 35 U.S.C. § 102(e).


It is respectfully submitted that any rejection on this basis is overcome.

Applicants also submit herewith an Amendment and Petition to delete inventors of the invention now being claimed pursuant to 37 C.F.R. § 1.48(b) along with the requisite petition fee under 37 C.F.R. § 1.17(i). Applicants note that the deleted inventors contributed to claims that were canceled in response to the restriction requirement and election of species. The inventive entity of the present application as amended now being identical to the inventive entity of the Vasel et al. patent, the Vasel et al. patent is not "by another," as required under 35 U.S.C. § 102(e), it is respectfully submitted that any rejection on this basis is further overcome.

12. In paragraph 17 of the Office Action, Claims 103, 104, 115-117 and 126-132 stand rejected under 35 U.S.C. § 103(a), as being unpatentable over U.S. Patent No. 5,965,839 (Vasel et al.).

Claims 103, 104, 115-117 and 126-132 have been canceled and new Claims 193-212 have been added.

Applicants submit herewith an Amendment and Petition



to delete inventors of the invention now being claimed pursuant to 37 C.F.R. § 1.48(b) along with the requisite petition fee under 37 § C.F.R. 1.17(i). Applicants note that the deleted inventors contributed to claims that were canceled in response to the restriction requirement and election of species. Thus, the inventive entity of the present application as amended now being identical to the inventive entity of the Vasel et al. patent, the Vasel et al. patent is not "by another," as required under 35 U.S.C. § 102(e). Thus, for purposes of 35 U.S.C. § 103(a), Vasel et al. is not prior art under 35 U.S.C. § 102(e); and therefore, cannot be used in a rejection under 35 U.S.C. § 103(a).

13. In paragraph 18 of the Office Action, Claims 103, 104 and 123 stand rejected under 35 U.S.C. § 103(a), as being unpatentable over U.S. Patent No. 5,965,839 (Vasel et al.) in view of U.S. Patent No. 5,821,450 (Fedida). Claims 103, 104 and 123 have been canceled. With respect to new Claims 193-212, as stated above in Paragraph 12 of this response, Vasel et al. is not a proper reference for use in a rejection under 35 U.S.C. § 103(a). Fedida alone does teach or suggest the invention as claimed. Thus, it is respectfully submitted that any rejection on this basis is overcome.

14. In paragraph 19 of the Office Action, Claims 108, 112, 114, 115-117 and 126-132 stand rejected under 35 U.S.C. § 103(a), as being unpatentable over U.S. Patent No. 5,965,839 (Vasel et al.) in view of U.S. Patent No. 5,353,712 (Olson). Claims 108, 112, 114, 115-117 and 126-132 have been canceled. With respect to new Claims 193-212, as stated above in Paragraph 12 of this response, Vasel et al. is not a proper reference for use in a rejection under 35 U.S.C. § 103(a).

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Olson alone does teach or suggest the invention as claimed. Thus, it is respectfully submitted that any rejection on this basis is overcome.

15. In paragraph 20 of the Office Action, Claims 118 and 119 stand rejected under 35 U.S.C. § 103(a), as being unpatentable over U.S. Patent No. 5,965,839 (Vasel et al.) in view of U.S. Patent No. 5,450,795 (Adelman). Claims 118 and 119 have been canceled. With respect to new Claims 193-212, as stated above in Paragraph 12 of this response, Vasel et al. is not a proper reference for use in a rejection under 35 U.S.C. § 103(a). Adelman alone does teach or suggest the invention as claimed. Thus, it is respectfully submitted that any rejection on this basis is overcome.

16. In paragraph 21 of the Office Action, Claim 122 stands rejected under 35 U.S.C. § 103(a), as being unpatentable over U.S. Patent No. 5,965,839 (Vasel et al.) in view of U.S. Patent No. 5,361,700 (Carbone). Claim 122 has been canceled. With respect to new Claims 193-212, as stated above in Paragraph 12 of this response, Vasel et al. is not a proper reference for use in a rejection under 35 U.S.C. § 103(a). As described above in Paragraph 3 of this response, Carbone alone does teach or suggest the invention as claimed in view of the secondary considerations. Thus, it is respectfully submitted that any rejection on this basis is overcome.

17. In paragraph 22 of the Office Action, Claims 115-117 and 124-132 stand rejected under 35 U.S.C. § 103(a), as being unpatentable over U.S. Patent No. 5,965,839 (Vasel et al.) in view of U.S. Patent No. 5,018,450 (Smith). Claims 115-117 and 124-132 have been canceled. With respect to new Claims

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193-212, as stated above in Paragraph 12 of this response, Vassel et al. is not a proper reference for use in a rejection under 35 U.S.C. § 103(a). Smith alone does teach or suggest the invention as claimed. Thus, it is respectfully submitted that any rejection on this basis is overcome.

18. In paragraphs 24-31 of the Office Action, Claims 101-108, 112, 114-119, 122-132, and 186-190 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-3 of U.S. Patent No. 5,965,839 to Vassel et al alone or in view of the respective one or more U.S. Patents are listed in Paragraphs 24-31 of the Office Action dated February 23, 2001: U.S. Patent No. 5,821,450 (Fedida), U.S. Patent No. 5,353,712 (Olson), U.S. Patent No. 5,450,795 (Adelman), U.S. Patent No. 5,361,700 (Carbone), U.S. Patent No. 5,018,450 (Smith), U.S. Patent No. 5,640,945 (Slonacker et al.), and U.S. Patent No. 4,856,218 (Reynolds, Jr.).

Claims 101-108, 112, 114-119, 122-132, and 186-190 have been canceled.

With respect to new Claims 193-212, a Terminal Disclaimer in compliance with 37 C.F.R. § 1.321(c) with respect to U.S. Patent No. 5,965,839 to Vassel et al. is submitted herewith. Applicants submit that the present application and U.S. Patent No. 5,965,839 were previously commonly owned by Jaycor (see the recorded assignment in the present application (REEL/FRAME: 010058/0018) and in U.S. Patent No. 5,965,839 (REEL/FRAME: 8462/0706)). Applicants further submit that the present application and U.S. Patent No. 5,965,839 are now commonly owned by Jaycor Tactical Systems, Inc. Thus, it is respectfully submitted that any rejection on this basis is overcome.



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✓ Applicants also submit herewith an Assignment Recordation Cover Sheet and Assignment including the assignment of U.S. Patent No. 5,965,839 and the present application from Jaycor to Jaycor Tactical Systems, Inc.

19. In response to paragraph 32 of the Office Action, which appears repetitious of the rejections as stated in Paragraphs 24-31, Applicants submit that this is overcome by the filing of the Terminal Disclaimer in compliance with 37 C.F.R. § 1.321(c).

20. In response to Paragraph 33 of the Office Action, Applicants submit that the present application and U.S. Patent No. 5,965,839 were commonly owned under 37 C.F.R. § 1.78(c) by Jaycor, of San Diego, CA, at the time the invention in the present application was made. To support this, Applicants note the assignment of U.S. Patent No. 5,965,839 to Jaycor recorded February 25, 1997 in the USPTO (REEL/FRAME: 8462/0706) and the assignment of the present application to Jaycor recorded June 25, 1999 in the USPTO (REEL/FRAME: 010058/0018). Thus, any rejection under 35 U.S.C. § 103(a) based upon art under 35 U.S.C. § 102 (f) or (g) will be precluded.

21. In paragraphs 34-42 of the Office Action, Claims 101-108, 112, 114-119, 122-132, and 186-190 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 12 of copending Application No. 09/543,289 to Vasel et al. in view of the respective one or more U.S. Patents are listed in Paragraphs 34-42 of the Office Action dated February 23, 2001: U.S. Patent No. 5,821,450 (Fedida), U.S. Patent No. 5,353,712

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(Olson), U.S. Patent No. 5,450,795 (Adelman), U.S. Patent No. 5,361,700 (Carbone), U.S. Patent No. 5,018,450 (Smith), U.S. Patent No. 5,640,945 (Slonacker et al.), U.S. Patent No. 4,856,218 (Reynolds, Jr.), and U.S. Patent No. 5,750,918 (Mangolds et al.).

Claims 101-108, 112, 114-119, 122-132 have been canceled.

With respect to new Claims 193-212, a Terminal Disclaimer in compliance with 37 C.F.R. § 1.321(c) with respect to copending Application No. 09/543,289 to Vasel et al. will be filed and will be addressed upon receipt of a Notice of Allowance of copending application No. 09/543,289. Therefore, upon the subsequent filing of a terminal disclaimer and Applicants showing of common ownership, Applicants submit that any such provisional rejection will be overcome.

22. In response to paragraph 43 of the Office Action, which appears repetitious of the provisional rejections as stated in Paragraphs 34-42, Applicants submit that this provisional rejection will also be overcome by the subsequent filing of the Terminal Disclaimer in compliance with 37 C.F.R. § 1.321(c).

23. In response to Paragraph 44 of the Office Action, Applicants submit that the present application and copending Application No. 09/543,289 were commonly owned under 37 C.F.R. § 1.78(c) by Jaycor, of San Diego, CA, at the time the invention in the present application was made. To support this, Applicants note the assignment of the present application to Jaycor recorded June 25, 1999 in the USPTO (REEL/FAME: 010058/0018) and the assignment of copending Application No. 09/543,289 to Jaycor recorded July 31, 2000 in the USPTO



(REEL/FRAAME: 011009/0147). Thus, any rejection under 35 U.S.C. § 103(a) based upon art under 35 U.S.C. § 102 (f) or (g) will be precluded.

Newly submitted Claims 193-212 are believed to be allowable because they are directed to that which is not shown or suggested in the prior art. In particular, support for new claims 193-212 is as follows.

Support for new Claim 193 can be found, inter alia, at page 21, lines 5-8 and at page 56, line 24 of the specification; page 29, lines 28-30 of the specification; page 53, lines 11-12 of the specification; and canceled Claims 101, 102, 105, 106, 115 and 126. Support for the powdered capsaicinoid element of new Claims 193 and 205 can be found in canceled Claims 101 and 102. Oleoresin capsicum is known in the art as a pepper substance. It is also well known in the art that oleoresin capsicum is comprised of three main capsaicinoids: capsaicin, dihydrocapsaicin and nordihydrocapsaicin. As such, it is known in the art that if a substance comprises oleoresin capsicum, that substance comprises a capsaicinoid.

Support for new Claims 194 and 204 can be found, inter alia, at page 12, line 35 of the specification.

Support for new Claim 195 can be found, inter alia, at page 68, lines 5-9; page 66, line 33 through page 67, line 5 of the specification.

Support for new Claims 196 and 206 can be found, inter alia, at page 68, lines 8 and 9 of the specification.

Support for new Claim 197 can be found, inter alia, at page 30, line 29 of the specification.

Support for new Claims 198 and 207 can be found, inter alia, at page 40, line 18 of the specification.

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Support for new Claims 199 and 208 can be found, inter alia, in FIG. 5, and the accompanying description thereof.

Support for new Claims 200 and 209 can be found, inter alia, at page 46, line 22 of the specification.

Support for new Claims 201 and 210 can be found, inter alia, at page 12, lines 13 and 14 of the specification.

Support for new Claims 202 and 211 can be found, inter alia, at page 15, line 11 of the specification.

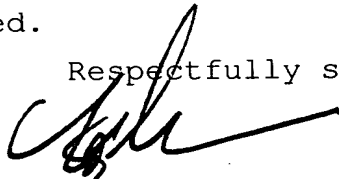
Support for new Claim 203 can be found, inter alia, at page 21, lines 5-8 and at page 56, line 24 of the specification; page 29, lines 28-30 of the specification; page 30, line 29 of the specification; page 37, lines 20-28 of the specification; page 53, lines 11-12 of the specification; page 68, lines 5-9 and lines 8-9 of the specification; page 66, line 33 through page 67, line 5 of the specification; in canceled Claims 101, 102, 105, 106, 115 and 126.

Support for new Claim 212 can be found, inter alia, at page 68, lines 8-9 of the specification.

CONCLUSION

Applicants submit that the above amendments and remarks place new Claims 193 through 212 in a condition for allowance. Therefore, a Notice of Allowance is respectfully and earnestly requested.

Respectfully submitted,



Thomas F. Lebens
Reg. No. 38,221

Dated: July 26, 2001

Attachments: Exhibit A
 Exhibit B

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Exhibit C
Declaration of Charles N. Mills
Declaration of Michael R. Waggoner
Declaration of Charlie Campe
Declaration of Roger E. Behrendt
Declaration of Craig L. Beery
Declaration of Edward J. Vasek
Declaration of Charles S. Heal

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